NAAHAR PUBLIC (CBSE) SENIOR SECONDARY SCHOOL
VILLUPURAM
MICROREVISION 6 "D and F block Elements"

SUBJECT: CHEMISTRY **MARKS : 30**
CLASS: XII **DUR :45 mins**
Tr's initial : Mrs.UMA **DATE:16.11.2022**

I.CHOOSE THE CORRECT ANSWER: **8x1/2=4**

1) Transition elements form alloys easily because they have

(a) Same atomic number (b) Same electronic configuration

(c) Nearly same atomic size (d) None of the above

2) Acidified potassium dichromate reacts with potassium iodide and oxidises it . What is the oxidation state of chromium in the products of the reaction?

(a) +4 (b) +6 (c) +3 (d) +2

3) Which of the following is likely to form white salts?

(a) Cu2+ (b) S3+ (c) Fe3+

4) Which one of the following characteristics of the transition metals is associated with higher catalytic activity?

(a) High enthalpy of atomization (b) Paramagnetic behavior

(c) Colour of hydrate ions (d) Variable oxidation states

5) Colour of transition metal ions are due to of are due to absorption of some wavelength. This results in

(a) d-s transition (b) s-s transition (c) s-t/transition (d) d-d transition

6) Which of the following pairs of ions have the same electronic configuration?

(a) Cu2+, Cr2+ (b) Fe3+, Mn2+ (c) Co3+, Ni3+ (d) Sc3+, Cr3+

7) Anomalous electronic configuration in the 3d series are of

(a) Cr and Fe (b) Cu and Zn (c) Fe and Cu (d) Cr and Cu

8) Which metal has lowest melting point?

(a) Cs (b) Na (c) Hg (d) Sn

II) ASSERTION AND REASONING **4x1=4**

Directions: These questions consist of two statements, each printed as Assertion and Reason. While answering these questions, you are required to choose any one of the following four responses.

(a) If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.

(b) If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.

(c) If the Assertion is correct but Reason is incorrect.

(d) If both the Assertion and Reason are incorrect.

9)**Assertion:** Tungsten has very high melting point.

Reason: Tungsten is a covalent compound.

10)**Assertion**: Cu cannot liberate hydrogen from acids.

Reason: Because it has positive electrode potential.

11) **Assertion**: The highest oxidation state of osmium is +8.

Reason: Osmium is a 5d-block element

12) **Assertion** : Cuprous ion (Cu+) has unpaired electrons while cupric ion (Cu++) does not.

Reason : Cuprous ion (Cu+) is colourless whereas cupric ion (Cu++) is blue in the aqueous solution.

III) ANSWER THE FOLLOWING **2x2=4**

13.Give reason for the following actinoid contraction is greater from element to element than lanthanoid contraction.

14.(i)Name the element showing the maximum number of oxidation states among the first series of transition metals from Sc (Z = 21) to Zn (Z = 30).

(ii) Name the element which shows only +3 oxidation state.

IV) ANSWER THE FOLLOWING QUESTION IN BRIEF **3x1=3**

14) HgO decomposes on heating but MgO does not. Explain with reason

Copper (I) ion is not known in aqueous solution.

V) ANSWER THE FOLLOWING IN DETAIL **3x5=15**

15) How would you account for the following :

(a) Cr2+ is reducing in nature while with the configuration (d4) Mn3+ is an oxidising agent.

(b) In a transition series of metals, the metal which exhibits the greatest number of oxidation states

occurs in the middle of the series.

16)Assign reasons for the following:

a) The enthalpies of atomization of transition elements are high.

b) The transition metals and many of their compounds act as good catalysts.

c) There is a gradual decrease in the atomic sizes of transition elements in a series with increasing atomic numbers.

d) The transition elements have a great tendency for complex formation.

e) Transition metals generally form coloured compounds.

17)[i]What happens, when [a] manganate ion reacts with thiosulphate? [b] dichromate ion reacts

with iron in presence of acid?

[ii] Explain the following trends in the properties of the members of the transition elements.

[a] Mn2+ is more stable than Fe2+ towards oxidation to +3 state.

[b] The enthalpy of atomization is lowest for Zn in 3d-seriesof the transition elements.

[c] The E0 value for the Mn3+/Mn2+ couples much more positive than that forCr3+/Cr2+ couple.